Analog Devices' 8-Bit to 16-Bit *nano*DAC™ Converters

Highest performance in the industry's smallest packaging

Power and Size Innovations for Consumer and Industrial Designs

It takes a great deal of innovation to engineer higher performance into smaller and smaller packaging. Along the way, many parts trade off certain aspects of performance to achieve packaging gains. Our *nano*DAC converter family does not. These are the smallest DACs in the world—but they're also more accurate and are lower power than the competition. So, whether you need an 8-bit DAC for a new digital camera, or an incredibly accurate 16-bit DAC for test and measurement equipment, Analog Devices has the right part for your application. By choosing from our *nano*DAC family, you're ensuring the best possible performance, the smallest possible package, and a greater overall value. For more information, visit *www.analog.com/nanoDAC*.

Part Number	Description	Max Power at 5 V	Price @ 1k ($U.S.)*
AD5641/AD5622 Family, the World's Smallest DACs			
AD5641	14 Bits in an SC70-6, SPI®	100 µA	2.95
AD5621	12 Bits in an SC70-6, SPI	100 µA	1.35
AD5622	12 Bits in an SC70-6, I²C®	100 µA	1.32
AD5611	10 Bits in an SC70-6	100 µA	1.18
AD5612	10 Bits in an SC70-6, I²C	100 µA	1.15
AD5601	8 Bits in an SC70-6, SPI	100 µA	0.95
AD5602	8 Bits in an SC70-6, I²C	100 µA	0.93
AD5660 Family, with 10 ppm/°C Reference			
AD5660	16 Bits, 16 LSB INL in an SOT-23-8	1 mA	3.29
AD5662	16 Bits, 16 LSB INL in an SOT-23-8 (Version Without Reference)	250 µA	2.83
AD5640	14 Bits, 4 LSB INL in an SOT-23-8	1 mA	3.18
AD5620	12 Bits, 1 LSB INL in an SOT-23-8	1 mA	1.80
AD5060 Family of Precision Converters			
AD5060	16 Bits, 1 LSB INL in an SOT-23-8	1.3 mA	13.50
AD5061	16 Bits, 4 LSB INL in an SOT-23-8	1.3 mA	8.50
AD5062	16 Bits, 1 LSB INL in an SOT-23-8 (Unbuffered)	600 µA	7.50
AD5063	16 Bits, 1 LSB INL in an MSOP-10 (Unbuffered)	600 µA	7.50
AD5040	14 Bits, 1 LSB INL in an SOT-23-8	1.3 µA	5.95

*USD 1,000s, recommended lowest grade resale, FOB U.S.A.

Features

AD5641

- 70% smaller
- 80% lower power
- 14-bit resolution
- 6-lead SC70 package
- Power-down to <1 µA @ 3 V
- 2.7 V to 5.5 V power supply
- Guaranteed monotonic by design
- Extended temperature range

AD5660

- 45% less board space
- 4× more accurate reference
- 16-bit resolution
- 8-lead SOT-23/MSOP package
- On-chip 1.25 V/2.5 V, 10 ppm/°C reference
- Power-down to <1 µA @ 3 V
- 2.7 V to 5.5 V power supply
- Guaranteed 16-bit monotonic by design
- Extended temperature range

AD5060

- 20× more accurate
- 50% smaller
- 16-bit resolution
- 1 LSB INL
- 8-lead SOT-23
- On-chip buffer
- Low power operation
- Low glitch on power-up
- Extended temperature range

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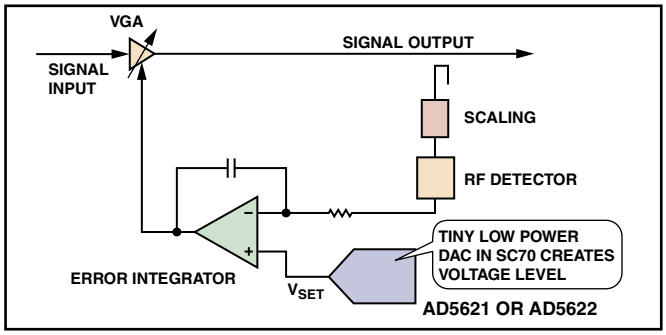
Combining Performance, Package, and Power for Diverse Applications

Application #1—Voltage Level Setpoints and Bias Generation

*nano*DACs in SC70 combine low power DACs in the industry's smallest package.

- Industry's smallest footprint minimizes board area used for support components
- Maximum current of 100 µA combined with a power-down feature minimizes overall power consumption
- SPI and I²C interface available

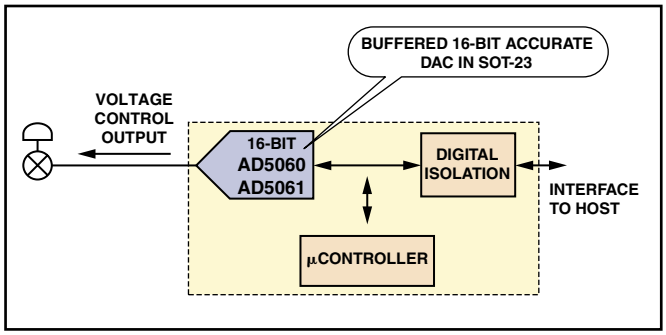


DAC sets voltage bias level for error integrator in RF power detector.

Application #2—High Performance Industrial Control for Open-Loop Systems

16-bit, 1 LSB INL *nano*DACs combine resolution and linearity for open-loop control systems.

- 16-bit resolution and accuracy combined with output buffer in an SOT-23 package ideal for open-loop systems where calibration may not be possible
- Unbuffered option with precision, on-chip resistors ideal for bipolar operation

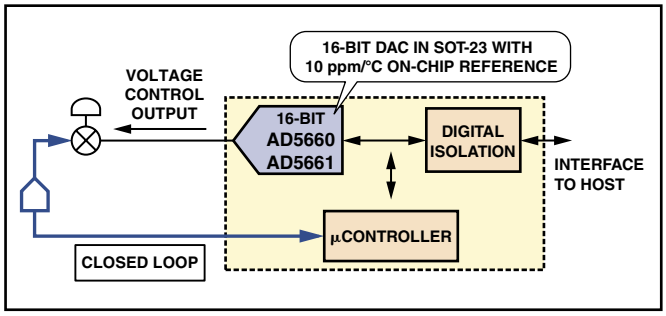


Open-Loop Control System—DAC accuracy is critical as system is open-loop.

Application #3—High Integration for Closed-Loop Control

16-bit *nano*DAC combines 12-bit accuracy with world's most accurate 10 ppm/°C on-chip reference in a space-efficient SOT-23; provides a cost-effective solution for medium performance closed-loop systems where system calibration is possible.

- 16-bit DAC with on-chip 10 ppm/°C reference in an SOT-23, SPI interface

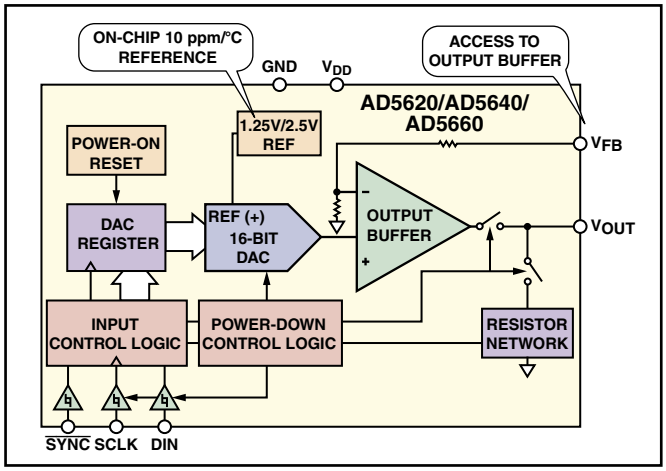


Closed-Loop Control System—System calibration can accommodate lower specification DAC; integration and package are important.

Application #4—Compact 12-Bit DAC Combines Reference in SOT-23

AD5620—12-bit, 1 LSB INL *nano*DAC combines 12-bit linearity and a reference into an SOT-23 package to provide a convenient solution for medium performance control systems or voltage bias generation. Access to the inverting input of the amplifier through the feedback resistor allows better accuracy for critical applications.

- Also available in 14-bit (AD5640) and 16-bit (AD5660) options



Combines 12-bit to 16-bit DACs with O/P buffer and precision reference in SOT-23.

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